



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-------------------------|---------------------|------------------|
| 09/740,284      | 12/19/2000  | Fernando Carlos Pereira | 2000-0102           | 7217             |

7590 11/18/2004  
Samuel H. Dworetsky  
AT&T CORP.  
P. O. Box 4110  
Middletown, NJ 07748-4110

EXAMINER

HARPER, V PAUL

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2654

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/740,284

**Applicant(s)**

PEREIRA ET AL.

**Examiner**

V. Paul Harper

**Art Unit**

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case, the parameters shown in the equation need to be defined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1-17 are rejected under 35 U.S.C. 102(a) as being anticipated by Singhal et al. ("AT&T at TREC-7" in Proceedings of the Seventh Text Retrieval Conference (TREC-7) ed Voorhees et al., July 1999), hereinafter referred to as Singhal.

Regarding **claims 1 and 10**, Singhal teaches a method for doing spoken document retrieval that includes the following steps:

- accessing a database of vectors of automatic transcriptions of documents (§3.1, p. 242, §3, “Speech Recognizer” generated a recognizer transcript, “Retrieval System” using word lattices for documents) ;
- truncating the vectors by removing all terms in the vectors that are not recognized by the recognizer, thereby creating truncated vectors (p. 244, “reducing spurious words,” §3.3 “constraining document expansion to allow only terms from recognizer”);
- changing weights of terms in the truncated vectors to weights associated with the vectors before the vectors were truncated to form the truncated vectors, thereby creating truncated, weighted vectors (p. 247, ¶2, §3.3 re-weighting of document vectors); and
- adding to the truncated, weighted vectors any terms which were not recognized by the recognizer (p. 244, add new words).

Regarding **claims 2 and 11**, Singhal teaches everything claimed, as applied above (see claims 1, and 10). In addition, Singhal teaches, “the step of comparing from the truncated vectors a retrieval of documents from the original vectors, thereby measuring effect of deletions from the original vectors on retrieval accuracy” (pp. 245, 246, Tables 4-6, §3.3, evaluated constrained document expansion allowing only terms from the recognizers).

Art Unit: 2654

Regarding **claims 3 and 12**, Singhal teaches everything claimed, as applied above (see claims 1 and 10). In addition, Singhal teaches “the step of measuring incremental loss in retrieval effectiveness due to insertion of the terms not recognized by the recognizer (p. 245, Table 4, Expanded Docs, p. 248, Figure 1, % loss from human transcriptions).

Regarding **claims 4 and 13**, Singhal teaches everything claimed, as applied above (see claims 3 and 12). In addition, Singhal teaches “the step of determining final retrieval effectiveness of the speech retrieval document using automatic transcriptions” (pp. 245-246, “Results and Analysis,” Table 6).

Regarding **claims 5 and 14**, Singhal teaches everything claimed, as applied above (see claims 4 and 13). In addition, Singhal teaches “the accessing step comprises the step of querying the database with the speech retrieval document to retrieve documents that are similar to each other (e.g. p. 243, §3.2, retrieval).

Regarding **claims 6 and 15**, Singhal teaches everything claimed, as applied above (see claims 5 and 14). In addition, Singhal teaches “the querying step comprises retrieving a predetermined number of documents which are most similar to the speech retrieval document (p. 247, ¶1, retrieving the ten most similar documents).

Regarding **claims 7 and 16**, Singhal teaches everything claimed, as applied above (see claims 6 and 15). In addition, Singhal teaches “the predetermined number is ten” (p. 247, ¶1, retrieving the ten most similar documents).

Regarding **claims 8 and 17**, Singhal teaches everything claimed, as applied above (see claims 6 and 15). In addition, Singhal teaches “the truncating step comprises the step of modifying the original vectors according to a weighting function to produce the truncated vectors” (p. 247, see ¶ 2. for the document weight calculation).

Regarding **claim 9**, Singhal teaches the use of the indicated formula (p. 247, ¶2 see formula).

3. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutson (U.S. 5,559,940) hereinafter referred to as Hutson.

Regarding **claims 1 and 10**, Hutson teaches a method for doing information analysis of textual material derived from speech recognition of acoustic information (col. 2, lines 10-12). Hutson's method includes the following steps:

- accessing a database of vectors of automatic transcriptions of documents (col. 2, lines 12-14, one or more documents are reformatted ... and placed into one or more matrices) ;

Art Unit: 2654

- truncating the vectors by removing all terms in the vectors that are not recognized by the recognizer, thereby creating truncated vectors (col. 2, lines 16-19, the matrices are modified to suppress (truncate) certain words);
- changing weights of terms in the truncated vectors to weights associated with the vectors before the vectors were truncated to form the truncated vectors, thereby creating truncated, weighted vectors (col. 2, lines 16-20, the matrix is modified to enhance certain words); and
- adding to the truncated, weighted vectors any terms which were not recognized by the recognizer (col. 2, lines 16-20, the matrix is modified to enhance certain words; col. 6, lines 20-34).

#### ***Citation of Pertinent Art***

4. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Cohen et al. (U.S. Patent 5,950,189) disclose a text retrieval system using vector representation.
- Choi et al. ("An Overview of the AT&T Spoken Document Retrieval" Proceedings of the Broadcast News Transcription and Understanding Workshop, pp. 182-190, Feb 1998) teach spoken document retrieval based on a vector model with word removal and weighting (abstract, §2.5).

Art Unit: 2654

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is 703 305-4197. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 703 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*V. Paul Harper*

VPH/vph

*Donald L. Stein*  
PATENT EXAMINER  
AU 2654